

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A system for synchronizing voice signal received via a public switched telephone network (PSTN) ~~and~~ data signal received via a digital subscriber line (DSL) ~~and~~, the system comprising:
 - a PSTN interface coupled to transmit and receive the voice signal ~~voiceband samples~~;
 - a data DSL transceiver coupled to modulate and demodulate the data signal ~~data to and from DSL samples~~;
 - a synchronization circuit coupled to synchronize said voice signal and said data signal ~~voiceband samples and said DSL samples~~; and
 - a converter circuit coupled to convert the synchronized ~~voiceband samples~~ voice signal and the synchronized ~~DSL samples~~ data signal between analog and digital formats.
2. (Currently amended) The system of claim 1, wherein said converter circuit converts said ~~voiceband samples~~ voice signal and said ~~DSL samples~~ data signal from a digital format to an analog format for transmitting a combined ~~voiceband~~ and data signal.
3. (Currently amended) The system of claim 1, wherein said converter circuit converts said ~~voiceband samples~~ voice signal and said ~~DSL samples~~ data signal from an analog format to a digital format for receiving a combined ~~voiceband~~ and data signal.
4. (Currently Amended) ~~The system of claim 1,~~ A system for synchronizing voice signal received via a public switched telephone network (PSTN) and data signal received via a digital subscriber line (DSL), the system comprising:
 - a PSTN interface coupled to transmit and receive the voice signal;
 - a data DSL transceiver coupled to modulate and demodulate the data signal;

a synchronization circuit coupled to synchronize said voice signal and said data signal; and

a converter circuit coupled to convert the synchronized voice signal and the synchronized data signal between analog and digital formats; wherein said synchronization circuit synchronizes said voiceband ~~samples~~ signal with said DSL ~~samples~~ signal and comprises:

a second converter circuit coupled to convert said voiceband ~~samples~~ signal from a companded format to a linear format;

an upsampler circuit coupled to increase a frequency of said voiceband ~~samples~~ signal from $(8 + \delta)$ kHz to $(8 + \delta) \cdot M$ kHz; and

a re-timer circuit coupled to synchronize the upsampled voiceband ~~samples~~ signal with said DSL ~~samples~~ data signal.

5. (Currently Amended) The system of claim 1, A system for synchronizing voice signal received via a public switched telephone network (PSTN) and data signal received via a digital subscriber line (DSL), the system comprising:

a PSTN interface coupled to transmit and receive the voice signal;

a data DSL transceiver coupled to modulate and demodulate the data signal;

a synchronization circuit coupled to synchronize said voice signals and said data signal; and

a converter circuit coupled to convert the synchronized voice signal and the synchronized data signal between analog and digital formats; wherein said synchronization circuit synchronizes said voiceband ~~samples~~ signal with said PSTN ~~clock~~ signal and comprises:

a re-timer circuit coupled to synchronize upsampled voiceband ~~samples~~ signal with said a PSTN clock;

a downsampler circuit coupled to reduce a frequency of said upsampled voiceband ~~samples~~ signal from $(8 + \delta) \cdot M$ kHz to $(8 + \delta)$ kHz; and

a second converter circuit coupled to convert the downsampled voiceband ~~samples~~ signal from a linear format to a companded format.

6. (Currently amended) The system of claim 1, wherein said synchronization circuit synchronizes said ~~voiceband samples~~ signal with said ~~DSL samples data~~ signal and comprises:

a phase offset detection circuit coupled to detect a phase difference between said a PSTN clock associated with said voice signal and said a DSL clock associated with said data signal;

a phase interpolation circuit coupled to adjust said ~~voiceband samples~~ signal according to the detected phase difference; and

a multiplexer circuit coupled to multiplex said ~~DSL samples data~~ signal with the adjusted ~~voiceband samples~~ signal for transmission.

7. (Currently amended) The system of claim 1, wherein said synchronization circuit synchronizes said ~~voiceband samples~~ signal with said ~~DSL samples data~~ signal and comprises:

a phase offset detection circuit coupled to detect a phase difference between said a PSTN clock associated with said voice signal and said a DSL clock associated with said data signal;

a demultiplexer circuit coupled to demultiplex said ~~voiceband samples~~ signal and said ~~DSL samples data~~ signal from a received signal; and

a phase interpolation circuit coupled to adjust said ~~voiceband samples~~ signal according to the detected phase difference.

8. (Currently Amended) A method of synchronizing a public switched telephone network (PSTN) ~~clock~~ voice signal and a digital subscriber line (DSL) ~~clock~~ data signal, the method comprising the ~~aets~~ steps of:

upsampling a the ~~voiceband~~ signal; to increase said ~~voiceband~~ signal's frequency to a frequency comparable with a that of the data signal; and

sample slipping one of said ~~voiceband~~ signal and said data signal; to synchronize said ~~voiceband~~ signal and said data signal.

9. (Currently Amended) The method of claim 8, wherein said ~~aet~~ step of sample slipping synchronizes said voice~~band~~ signal with said data signal.

10. (Currently Amended) A method of synchronizing a public switched telephone network (PSTN) ~~clock~~ voice signal and a digital subscriber line (DSL) ~~clock~~ data signal, the method comprising the ~~aets~~ steps of:

determining a phase offset between a the voice~~band~~ signal and a the data signal;
and

shifting one of said voice~~band~~ signal and said data signal according to said phase offset; to synchronize said voice~~band~~ signal and said data signal.

11. (New) The system of claim 1 further comprising:
circuitry adapted to combine the voice signal and the data signal.

12. (New) The system of claim 11 further comprising:
a converter circuit coupled to convert the combined voice and data signals
between analog and digital formats.